Tyvek Sleeve Specifications

1. Definition

Sleeves are to be fabricated from Tyvek B1060 material in 11 different sizes as shown in the attached drawing. The Tyvek material to be used has been purchased by International Irrigation from Dupont and printed with a pattern specific for this purpose.

2. Quantity

We require 40,000 sleeves of each size, plus 2000 additional sleeves of sizes 10 and 11, for a total of 444,000 sleeves. The quantity of printed Tyvek material is estimated to be sufficient for this quantity and, in addition, allow for approximately 20% waste of material in the process setup.

3. Dimensional Tolerances

The dimensions listed in the drawing are best estimates, based on the dimensions of plastic tiles that are to be inserted into the sleeves. The final sleeve lengths will be defined by the center of the black bands printed on the Tyvek. The ends of the sleeves should be cut to leave printed bands on the interior of the sleeve that are equal in width at each end with a tolerance of ± 1.0 mm. The angle of the open ends should match the angle of the tiles, namely 2.8 ˚ with a tolerance of ± 0.3 ˚. The placement tolerance of the punched holes is ± 1.0 mm. The final inside dimension of the sleeves, labeled 'H' in the Figure, will be adjusted to be a 'good fit' (defined below) to a set of plastic tiles that will be provided to International Irrigation by the purchaser .

4. Sleeve Diameter

The inside diameter, dimension 'H', of the sleeves should be determined using a device such as the gauge described below. The specification of this dimension for each sleeve size will be agreed after examination by the purchaser of a sample of 100 sleeves provided by International Irrigation before final production of each sleeve diameter is begun. The approved diameter should be maintained within a range of 1mm (± 0.5 mm) during the production run.

5. Quality Assurance Tests

The purchaser will provide a set of templates for checking the sleeve lengths and hole placements that will define the ± 1 mm tolerances on these dimensions. A set of gauges will be provided to measure the inside diameter of the sleeves. The template and diameter gauges are illustrated on the accompanying drawings.

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International Irrigation will sample the product with sufficient frequency to assure a 95% compliance with the specifications for each sleeve size. The samples will constitute at least 0.1% of each sleeve size produced, approximately evenly spaced over the production run. The sleeves produced between samples will be packaged together and identified with a serial number that can be associated with the sample number. A record of the samples and test result will be maintained and provided to the purchaser along with the sample sleeves at the end of the production run. The purchaser agrees to pay the additional costs, not to exceed $1000, associated with these quality assurance procedures.

6. Delivery and Payment Schedule

The first sleeves to be delivered should be size 11. International Irrigation will attempt to produce 1/3 of the size 11 sleeves and ship these to CERN via air freight within 60 days of receipt of the purchase order. The remaining sleeves can be shipped in any order. International Irrigation will attempt to produce and ship the first 1/3 of the sleeves of each of sizes 1-10 to CERN via surface carrier within 90 days of receipt of the purchase order. The remaining sleeves can be shipped to CERN via surface carrier any time after production is completed, but not later that Dec. 31, 1999. Payment for the first 1/3 of the sleeves will be due within 30 days of shipping and receipt of Invoice. Payment for the remaining sleeves will be due within 30 days of shipping and receipt of Invoice but not before Oct. 31, 1998.

7. Packaging and Shipping

The sleeves should be packaged flat, without folds or rolls. The different sizes should be packaged separately and the size and quantity clearly stated on the package. The packaging should protect them from moisture and spoilage due to normal environmental conditions during shipment and storage. The packaging should remain intact with standard handling methods for the mode of shipping used. The shipment should be insured at a value equal to replacement cost of $0.53 per sleeve.

The shipping address is:

Jean-Marie Chapuis
BAT. 867, R-K07
CERN Site de Prevessin
CH-1211 GENEVE 23
SWITZERLAND

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To arrange customs clearance, notification of the shipment and copies of paperwork should be communicated to:

Bernard Duthion
Division EP
CH-1211 GENEVE 23
SWITZERLAND
TEL: +41 22 767 6014
FAX: +41 22 767 7910

8. Residual Material

Residual Tyvek material in excess of 100 linear feet/roll, printed and unprinted, will be shipped to the purchaser, at the purchasers request and expense, after the quantity of the sleeves that have been ordered is agreed to be complete.

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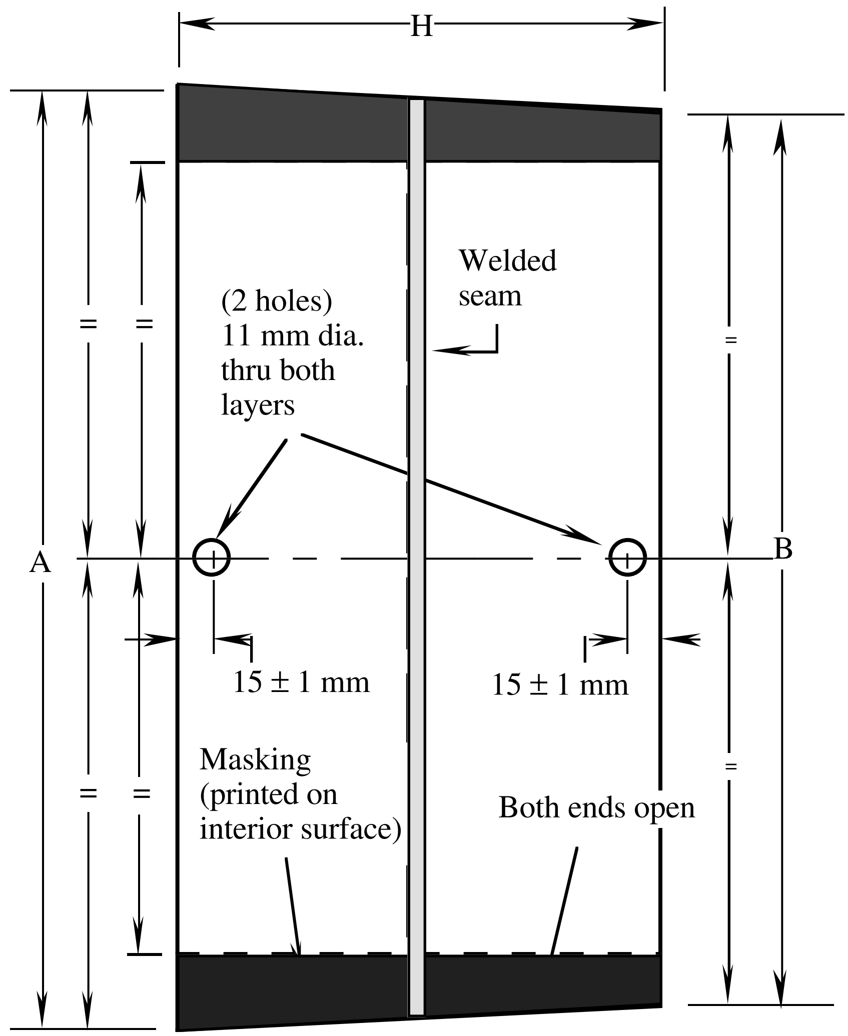

SLEEVE #	A ± 1 (mm)	B ± 1 (mm)	H ±0.5 (mm)
1	224	214	99.0
2	233	224	99.0
3	243	233	99.0
4	257	245	129.0
5	270	257	129.0
6	283	270	129.0
7	296	282	149.0
8	312	298	149.0
9	325	310	149.0
10	343	324	189.0
11	362	343	189.0

ITEM	PART NO.	DESCRIPTION	QTY.
PARTS LIST			
UNLESS SPECIFIED: DECIMALS ± 1 mm FRACTNS ± ANGLES ± DO NOT SCALE DWG	ORIG		
	DRAWN R. Miller	8-16-97	
	PROJECT ATLAS TileCal		
	MATERIAL Tyvek 1055B		
MICHIGAN STATE UNIVERSITY HIGH ENERGY PHYSICS			
TITLE Tile Sleeves			
DWG. NO. HEP01-024-352	REV.	SCALE	

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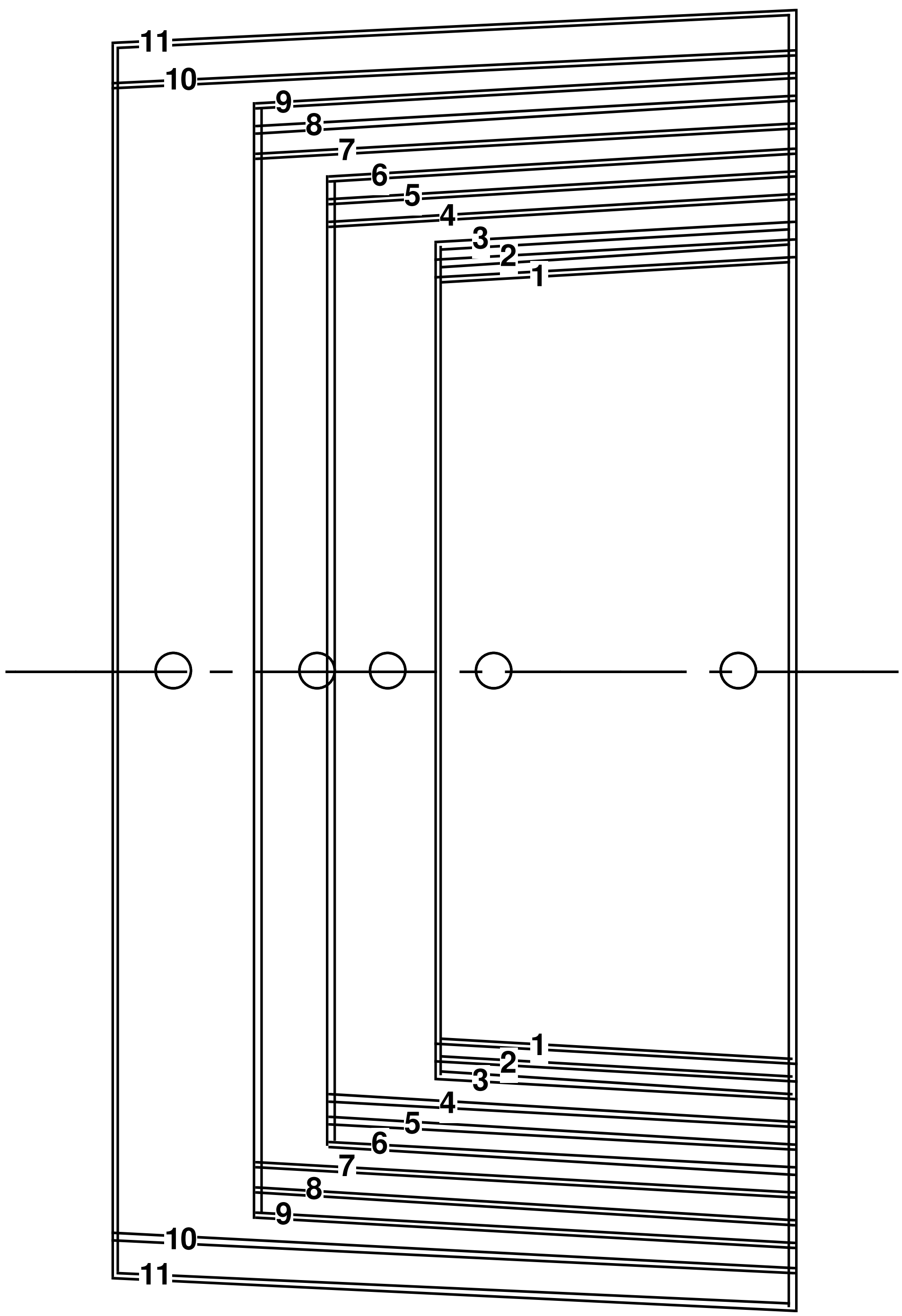
Sleeve Templates



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Sleeve Circumference Gauge